Haotian XIE

RESEARCH INTERESTS

- Data-driven and human-centered decision-making
- Supply chain and transportation management
- Nonequilibrium statistical physics and information theory

EDUCATION

The University of Hong Kong (HKU)

Hong Kong, China
Sep 2024 - Now

M.S. (Eng) Industrial Engineering and Logistics Management

- RELEVANT COURSE
  Relevant Course: Operational Research, Data-driven Optimization, Logistics and Transportation Systems

Beijing Normal University (BNU)

Beijing, China
Sep 2020 – June 2024

B.S. System Science and Engineering

- RELEVANT COURSE
  Mathmatics, Physics, Systems Engineering, Systems Optimization, Game Theory, Agent-based Modeling, Dynamic System analysis, Artificial Intelligence
- THESIS
  Convergence of complex dynamic networks based on Vicsek model
  (Excellent Graduation Thesis, Advisor: Prof. Zengru DI)

Beijing Normal University (BNU)

Beijing, China
Sep 2020 – June 2024

B.Ec. Finance

- RELEVANT COURSE
  Statistics, Micro- & Macro-economics, Econometrics, Finance, Accounting
- THESIS
  Credit risk of blockchain-driven supply chain finance enterprises based on MCDM
  (Excellent Graduation Thesis, Advisor: Prof. Lei CHEN)

PUBLICATIONS

Preprint Articles

- **Xie, H.** , & Tsang, Y.*. An intelligent system to explore barriers of decentralized autonomous organizations in e-commerce supply chains. (Under review at *Engineering Applications of Artificial Intelligence*)
- **Xie, H.** , Liu, H., & Tang, Y.*. Identifying extreme precipitation using nonequilibrium thermodynamics. (Under review at *Communications Physics*)

Peer-reviewed Journal Articles

- **Xie, H.*** , Li, Y., Pu, Y., Zhang, C., & Huang, J. (2024). Evaluating airline service quality through a comprehensive text-mining and multi-criteria decision-making analysis. *Journal of Air Transport Management*, *120*, 102655. (IF=4.5, JCR Q1) Link, PDF
- Li, Y., Tan, Y., Pu, Y., Zhu, Y., & **Xie, H.*** (2023). Exploring the drivers of green supply chain management in the Chinese electronics industry: Evidence from a GDEMATEL–AISM approach. *Cleaner Logistics and Supply Chain*, *7*, 100110. (IF=6.9, JCR Q1) Link, PDF
- Yang, K., Liu, T., Wang, Z., ..., **Xie, H.**, ..., Zhang, K.* (2021). Classifying Drosophila olfactory projection neuron boutons by quantitative analysis of electron microscopic reconstruction. *iScience*, *25*. 104180. (IF=5.0, JCR Q1) Link, PDF

* Corresponding author

RESEARCH EXPERIENCES

Identifying extreme precipitation using nonequilibrium thermodynamics

Sep 2021 - May 2024

Advisor: Prof. Ying TANG, School of Systems Science, BNU

- Developed and applied an integrated framework using the Landau distribution and large deviation theory, resulting in improved modeling of extreme precipitation events across global locations. This approach yielded a 10% to 20% increase in accuracy compared to conventional distributions.
- Applied large deviation theory to compute return times for extreme events and forecast future precipitation scenarios, enabling predictions of events up to 5-10 times beyond average precipitation levels with 95% confidence.
- Strengthened proficiency in advanced statistical methods and data analysis, developed skills in applying complex mathematical models to real-world environmental challenges, and improved my ability to synthesize interdisciplinary approaches for solving critical problems.

Examining Drivers of Green Supply Chain Management

Sep 2022 - May 2023

Advisor: Prof. Zengru DI & Prof. Keqiang LI, School of Systems Science, BNU

- Conducted mixed methods research including literature analysis, qualitative interviews, and mathematical modeling to identify key determinants driving the adoption of green supply chains in the electronics industry.
- Developed an original conceptual framework, leveraging MCDM techniques to examine the interrelationship among the drivers and their relative importance.
- Led comprehensive review of scholarly literature, primary data gathering through stakeholder interviews, advanced statistical analysis, and dissemination of novel findings.

A Multi-Criteria Evaluation of Airline Service Quality

Oct 2021 - Jul 2022

Advisor: Prof. Keqiang LI, School of Systems Science, BNU

- Designed an integrated benchmarking model, utilizing MCDM methods to systematically assess and rank airline service performance.
- Compiled a text-mining dataset elucidating multifaceted service attributes and consumer predilections by scrutinizing survey responses from over Internet, manuscripts, and journalistic expositions.
- Performed multivariate analysis, operations research, decision modeling, and insightful interpretation of results.

WORK EXPERIENCES

E-commerce Supply Chains Optimization Project

Hong Kong, China
Sep 2023 - Mar 2024

Position: Research Assistant (Advisor: Dr. Yung Po TSANG),

Department of Industrial & Systems Engineering, The Hong Kong Polytechnic University

- Led research on DAO barriers in e-commerce supply chains, authored SCI papers, and presented research results at international conferences.
- Identified 12 key DAO implementation factors, integrated Bayesian theory and game theory to develop algorithms, and elucidated and visualised the intricate relationships and hierarchies of potential barriers.
- Coordinated a cross-functional team of four researchers, engaged in liaising and consultation with over ten researchers, and enhanced cooperation and coordination capabilities.

Process Identification and Optimization Project

Dongguan, China
Jul 2023 - Sep 2023

Position: Process and Supply Chain Management Coordinator,

Mentech Optical & Magnetic Co.,Ltd (002902.SZ)

- Leveraged complex networks analysis and predictive modelling techniques to pinpoint process optimization opportunities and formulate risk mitigation strategies.
- Forged collaborative relationships with cross-departmental teams to deploy process enhancements and execute targeted "Project Velocity" to curtail lead times for a specific product by 10% and trim inventory expenses by 5%.
- Constructed intuitive data visualizations and dashboards to lucidly communicate supply chain metrics and trends to executive leadership.

PRESENTATIONS

- 12th International Conference on Complex Networks and their Applications, Menton, France (Poster) Nov 2023
- 18th China Conference on Complex Networks, Zhuhai, China (Presentation) Nov 2022

AWARDS

- 99 YUAN CHUAN Scholarship, BNU (4 / 150) 2023
- Academic Scholarships, BNU (50 / 3000) 2023

COMPETENCES

LANGUAGES

Chinese (native), Cantonese (native), English (C1)

TECHNIQUES

Data analysis in C, MATLAB & Python, and Word process in LaTeX & Microsoft Office

REFERENCES

ZENGRU DI

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Tel: 86-10-58802732 Email: kqli@bnu.edu.cn